

Serial No. 10/726,832
Amendment and Response
Filed October 16, 2007

Remarks

Claim 26 has been amended in accordance with the Examiner's suggestions. Support for these amendments is found in the claims as originally filed and throughout the specification, for example at paragraphs 63-65 and Figure 4. No new matter has been added, and no new material presented that would necessitate an additional search on the part of the Examiner.

Upon entry of this Amendment and Response, claims 1-32 remain pending.

Rejection Under 35 U.S.C. 112, First Paragraph

Claims 26 and 27-32 were rejected under 35 U.S.C. 112, first paragraph because, according to the Examiner, the invention disclosure is "not enabling." Specifically, the Examiner stated: "'representation of a volume of interest located within a multi-dimensional data set' is critical or essential to the practice of the invention, but not included in the claim(s) [sic] is not enabled by the disclosure." (7/16/07 Office Action, p. 2). The Examiner also rejected Claims 27-32 for the same reason as Claim 26 because these claims directly or indirectly depend on Claim 26.

In response, Applicants have amended Claim 26 in accordance with the Examiner's suggestion. Specifically, Claim 26 has been amended to clearly indicate that the volume of interest being represented is located within a multiple-dimensional data set. As noted above, Claims 27-32 directly or indirectly depend on Claim 26 and include all of the limitations of newly amended Claim 26. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. 112, first paragraph rejection of Claims 26 and 27-32.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1-32 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner stated: "It is unclear whether the generated faceplate [of Claim 1] or associating a set of pixels with a faceplate [as claimed in Claim 13] is defined as a function or information of the structure of interest." (7/16/07 Office Action, p. 3).

Generating the faceplate is a function of Applicants' claimed invention, and the faceplate that is generated may also contain information with respect to the structure of interest. In one

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aspect, Applicants' invention provides a system and method for viewing information within a multiple-dimensional data set by identifying a view axis that intersects a multiple-dimensional data set, modifying the multiple-dimensional data set to align one of the dimensions of the multiple-dimension data set responsive to the view axis, locating a portion of a structure-of-interest with respect to a distance along a vector parallel to view axis, associating a set of voxels with a faceplate, and generating a composite view in accordance with the faceplate. Image data comprises a function of pixel information associated with a faceplate and voxel values associated with voxels along the ray cast line that intersect the two-dimensional plane of interest used to locate the faceplate within the volume of interest.

Figure 9 of the present invention provides a specific, non-limiting example of a method of using the system of the present invention. First, a view axis is identified. Next, the multiple-dimension data set is aligned in response to the view axis. Thereafter, a ray cast projection of the aligned data set is performed to construct a two-dimensional image that contains three-dimensional image information. Each of the plurality of pixels comprising a two-dimensional representation of the information in the multi-dimensional data set is ray cast along a vector parallel with the view axis. Once the image information contained within the aligned data set is projected, a portion of a structure-of-interest can be located.

Next, a two-dimensional plane that intersects the located portion-of-interest is identified. Thereafter, a faceplate is generated that comprises voxels that both contain structure-of-interest information and that intersect the two-dimensional plane. Next, a composite view responsive to the faceplate is generated. The composite view may comprise a function of image information from the faceplate only, a function of image information from voxels that intersect the faceplate, and/or a function of both. These functions can include operator selected variables for controllably adjusting the composite image. The composite view may be rendered to a display device in accordance with known two-dimensional rendering methods.

In view of the clarification provided above, Applicants submit that Claims 1-32 satisfy the requirements of 35 U.S.C. 112, second paragraph, and respectfully request withdrawal of this rejection.

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Summary

In view of the foregoing amendments and remarks, Applicants respectfully submit that the pending claims are in condition for allowance, which is respectfully requested.

If there are any questions regarding these remarks, the Examiners are invited and encouraged to contact Applicants' representative at the telephone number provided.

Respectfully submitted,

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